

**ABSTRACT**

To detect the rotational speed and angular position of a rotating wheel, a non-contact sensor (e.g., an optical sensor or a Hall sensor) scans scan marks on the wheel, and generates a pulse train. The amplitude of the pulses is compared in a comparator with a variable switching threshold. To achieve accurate measurement results, and to compensate for offset and long-term drift of the sensor, the switching threshold is adjusted if one or more of the following conditions is met: (i) the difference between the pulse amplitude and the switching threshold exceeds a fixable first maximum, (ii) the difference of the amplitudes of two successive pulses exceeds a fixable second maximum, (iii) the difference of the frequencies of successive pulses exceeds a fixable third maximum. The method is particularly advantageous in a motor vehicle, to detect the rotational speed and angular position for an electronic ignition system, or the rotational speed and angular position of the wheels for an ABS braking system, an anti-skid system, or a vehicle stabilization system.